

FORM PTO 1590
(REV 5-93)

US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY DOCKET NO.
00169/P17508-01TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 USC 371U.S. APPLICATION NO.
(if known) 37 CFR 1.53
(NEW) 09/380812International Application No.
PCT/JP99/00045International Filing Date
January 8, 1999Priority Date Claimed
January 9, 1998

Title of Invention

SYNTHETIC CHLOROPRENE RUBBER ADHESIVE COMPOSITION AND PROCESS FOR PRODUCING SPEAKER BY USING THE SAME

Applicant(s) For DO/EO/US

Kazuro OKUZAWA; Yoshio BABA; and Kazutami WAKABAYASHI

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 USC 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 USC 371.
3. ☒ This is an express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 USC 371(c)(2))
 - a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 USC 371(c)(2)(B) (Attachment A))
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 USC 371(c)(3)).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 USC 371(c)(3)).
9. ☒ An **unexecuted** oath or declaration of the inventor(s) (35 USC 371(c)(4)). (Attachment B)
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 USC 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. (Attachment C)
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment. (Attachment D)
 - ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:
International Search Report (Attachment E)

THE COMMISSIONER IS AUTHORIZED
TO CHARGE ANY DEFICIENCY IN THE
FEE FOR THIS PAPER TO DEPOSIT
ACCOUNT NO. 25-0975.

U.S. APPLICATION NO. 09/380812 [NEW]		INTERNATIONAL APPLICATION NO. PCT/JP99/00045		ATTORNEY DOCKET NO. 00169/P17508-01 (IS. Hasegawa)	
17. [X] The following fees are submitted				CALCULATIONS	
BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):				PTO USE ONLY	
[X] Search Report has been prepared by the EPO or JPO \$840.00					
[] International preliminary examination fee paid to USPTO (37 CFR 1.482) \$670.00					
[] No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) \$760.00					
[] Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$970.00					
[] International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-33(4) \$ 96.00					
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$840.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
Claims	Number Filed	Number Extra	Rate		
Total Claims	4 - 20 =	0	X \$18.00	\$	
Independent Claims	2 - 3 =	0	X \$78.00	\$	
Multiple dependent claim(s) (if applicable)			+ \$260.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$840.00	
Reduction by ½ for filing by small entity, if applicable. Verified Small Entity Statement must also be filed. (Note 37 CFR 1.9, 1.27, 1.28)				-	\$
SUBTOTAL =				\$840.00	
Processing fee of \$130.00 for furnishing the English translation later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	\$
TOTAL NATIONAL FEE =				\$840.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (\$40 per property).				+	\$
TOTAL FEES ENCLOSED =				\$840.00	
				Amount to be refunded:	\$
				charged:	\$

- a. [X] A check in the amount of \$840.00 to cover the above fees is enclosed.
- b. [] Please charge my Deposit Account No. 23-0975 in the amount of \$_____ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. [X] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 23-0975. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

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By Matthew Jacob
Matthew Jacob
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September 9, 1999
MJ/adc

Check No. 34840
99_0947A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :
Kazurou OKUZAWA et al. : **Attn: BOX PCT**
Serial No. [NEW] : **Docket No. 00169/P17508-01**
Filed September 9, 1999 :
SYNTHETIC CHLOROPRENE RUBBER :
ADHESIVE COMPOSITION AND PROCESS :
FOR PRODUCING SPEAKER BY USING :
THE SAME :
[Corresponding to PCT/PCT/JP99/00045 :
Filed January 8, 1999]

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

In the interest of compact prosecution, please amend the present application as follows:

IN THE SPECIFICATION:

- Page 1, line 18, delete "a" (first occurrence);
- line 22, change "adhesives" to --adhesive--;
- line 28, change "concerning an" to --taking--, and delete "an"; and
- line 30, delete "also".
- Page 2, line 5, delete "also";

Attachment D

09/380812.112399

line 26, change “comparing with” to --in comparison to--;

line 27, change “is resulted” to --results--; and

line 30, change “derivative” to --derivatives--.

Page 3, line 4, delete “for describing the process”

line 5, change “for producing the speaker in” to --of--;

line 8, change “on” to --of--;

line 11, delete “the paragraph of”;

line 12, change “detail” to --detail,--; and

line 17, delete “a”.

Page 4, last line, before “necessary” insert --the--.

Page 6, line 20, change “to that” to --thereto--; and

line 22, delete “the”.

Page 7, line 8, before “synergistic” insert --a--; and

line 14, change “in weight for” to --by weight per--.

Page 8, line 2, change “in weight for” to --by weight per--.

IN THE CLAIMS:

Claim 1, line 2, change “for” to --as--.

2. (Amended) [A] The synthetic chloroprene rubber adhesive composition according to claim 1, wherein said chlorinated polypropylene derivative is acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene, and, the volume of said chlorinated polypropylene and/or said chlorinated polypropylene derivatives contained in said adhesive composition is 1-30 parts [in] by weight [for] per 100 parts [in] by weight of said synthetic [chloroplene] chloroprene rubber.

4. (Amended) [A] The process for producing a speaker according to claim 3, wherein said chlorinated polypropylene derivative is acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene, and, the volume of said chlorinated polypropylene and/or said chlorinated polypropylene derivatives contained in said adhesive composition is 1-30 parts [in] by weight [for] per 100 parts [in] by weight of said synthetic [chloroplane] chloroprene rubber.

REMARKS

The above amendment is made to correct minor editorial errors.

Favorable action is now requested.

Respectfully submitted,

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September 9, 1999

SYNTHETIC CHLOROPRENE RUBBER ADHESIVE COMPOSITION
AND PROCESS FOR PRODUCING SPEAKER BY USING THE SAME

FIELD OF THE INVENTION

5 The present invention relates to a synthetic chloroprene rubber adhesive composition, and, more particularly, the invention relates to a synthetic chloroprene rubber adhesive composition for bonding components, at least one of which is formed with polypropylene, and a process for producing a speaker by using the adhesive composition.

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BACKGROUND OF THE INVENTION

Conventionally, a chrome plated steel plate is used for a speaker frame, and various speaker components are bonded to the speaker frame by using an adhesive.

15 A vibration plate (hereinafter referred to as a cone) is bonded to the speaker frame via an edge.

When the edge is formed with a compression molded foamed urethane or an ethylene-vinyl-acetate-copolymer to increase a mechanical strength, a water base synthetic chloroprene rubber adhesive or a water base SBR (styrene-butadiene-copolymer-rubber) adhesive are used for bonding the edge to the frame because those edge materials are soluble or swelled in a solvent based adhesives.

On the other hand, when the edge is formed with a kind of rubber such as natural SBR, EPDM (ethylene-propylene-diene-rubber) or the like, a solvent base synthetic chloroprene rubber adhesive, a water base synthetic chloroprene rubber adhesive, a solvent base SBR adhesive or a water base SBR adhesive is used.

In general, the adhesive is selected concerning an adhesion, an influence on the materials, cost and production efficiency into account.

30 When the cone is directly bonded to the speaker frame also, the adhesive

is selected in the same manner as described above in general.

When a damper is bonded to the speaker frame, a solvent base synthetic chloroprene rubber adhesive is generally used because the damper is formed with phenol-resin-impregnated cloth.

5 For bonding a top plate to the speaker frame also, a solvent base synthetic chloroprene rubber adhesive is generally used because the top plate is formed with a metal plate.

In recent years, however, from the viewpoint of recycling for the protection of environment and for decreasing the weight of a speaker, polypropylene has come to be used for the speaker frame. In this case, the conventional adhesives described above have not sufficient adhesion to the polypropylene speaker frame, i.e., the conventional adhesives have not sufficient bonding strength for producing a speaker having a polypropylene frame.

15 The present invention aims to provide a synthetic chloroprene rubber adhesive composition that is superior in bonding various components to the components formed with polypropylene as described above, also aims to provide a process for producing a speaker by using the adhesive composition.

20 SUMMARY OF THE INVENTION

The present invention is to provide a synthetic chloroprene rubber adhesive composition which contains carboxylated synthetic chloroprene rubber for the main ingredient thereof and further contains chlorinated polypropylene and/or chlorinated polypropylene derivatives.

25 The above adhesive composition shows improvement on adhesion and durability against heat comparing with conventional adhesives in bonding various components to polypropylene, which is resulted from the synergistic effect of carboxylated synthetic chloroprene rubber selected from the varieties of synthetic chloroprene rubber and a kind of chlorinated polypropylene, i.e., chlorinated polypropylene and/or the derivative thereof, which are(is) used for

the additive(s) of the adhesive composition.

BRIEF DESCRIPTION OF THE DRAWING

Fig. 1 shows a cross sectional view of a speaker for describing the process for producing the speaker in the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The following are descriptions on a synthetic chloroprene rubber adhesive composition in the present invention and a process for producing a speaker using the same.

First, the structure of the speaker, which is described in the paragraph of the background of the invention, is described hereinafter in more detail referring to Fig.1.

A cone 2 which is formed with resin impregnated natural pulp or the like is bonded to a speaker frame 1 which is formed by molding polypropylene, via an edge 3 which is formed with compression molded foamed urethane or an ethylene-vinyl-acetate-copolymer to increase a mechanical strength. The edge 3 is formed with a kind of rubber such as natural SBR, EPDM or the like also. The inner annular end of the cone 2 is bonded to a voice coil 4.

The outer annular end of a damper 5 which is formed with resin impregnated cloth is bonded to the speaker frame 1, and, the inner annular end of the damper 5 is bonded to the voice coil 4.

A ring-shaped top plate 6 which is bonded to the bottom of the speaker frame 1, a ring-shaped magnet 7 and a bottom plate 8 having a center pole compose a magnetic circuit 9. In a gap between the center pole of the bottom plate 8 and the top plate 6, a magnetic gap 9a is formed. The coiled portion of the voice coil 4 is movably inserted into the gap.

An adhesive 10, which is a synthetic chloroprene rubber adhesive composition containing carboxylated synthetic chloroprene rubber for the main ingredient thereof and further containing chlorinated polypropylene, is

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applied between the speaker frame 1 and the other speaker component parts such as the edge 3, the damper 5, the top plate 6, etc. respectively for tenaciously bonding between the speaker frame 1 formed with polypropylene and the other speaker components.

5 In a speaker in which the edge 3 is not used, the adhesive 10 is applied between the cone 2 and the speaker frame 1 for bonding between these.

Next, a synthetic chloroprene rubber adhesive composition, which is used for bonding various speaker components to the speaker frame formed with polypropylene, is described hereinafter referring to Table 1.

10 In Table 1, test examples 2 through 4 show adhesive compositions in the exemplary embodiment of the present invention, and test example 1 shows an adhesive composition in a conventional synthetic chloroprene rubber adhesive.

Table 1

(PHR)

Ingredient	Test example			
	1	2	3	4
Neoprene AD (synthetic chloroprene rubber used as adhesive in general)	100			
Neoprene AF (carboxylated synthetic chloroprene rubber)		100	100	100
BHT (antioxidant)	2	2	2	2
Zinc oxide	5	5	5	5
Magnesium oxide	8	8	8	8
tert.-Butylphenol resin	60	60	60	60
Terpene-phenol resin	10	10	10	10
Chlorinated polypropylene	20	20		10
Hydroxyethyl-acrylate-grafted chlorinated polypropylene			20	20
Organic solvent composed of toluene (4), ethyl acetate (3) and normal hexane (3)	465	465	465	455

The adhesive compositions of the test examples in Table 1 are prepared in such a manner that necessary volume of the organic solvent is poured into a

vessel, then tert-butylphenol resin and terpene-phenol resin are put into the same vessel and these are dissolved under room temperature. In the other process, synthetic chloroprene rubber, antioxidant, zinc oxide and magnesium oxide are kneaded using a roll mill, then the kneaded lump is cut to small pieces, then these are put into the above vessel. Then, stirring is performed on the materials in the vessel for 8 to 10 hours under room temperature until all of these dissolve completely.

Then additive(s) such as chlorinated polypropylene and/or the like are/is put into the vessel, and the additive(s) are/is dissolved by stirring under the temperature of 20 - 40°C. Thus the adhesive compositions of Table 1 are obtained. The viscosity of the adhesive compositions is adjustable by changing the volume of the organic solvent.

Table 2 shows the test results of the adhesion strength of the adhesive compositions of the test examples 1 through 4 of Table 1 under the conditions of (a) after 48 hours under normal condition, (b) after heat aging and (c) under high temperature.

Table 2

(N/25mm)

Test condition	adhesion strength (180° peeling off)				Test method
	1	2	3	4	
Adhesion after 48 hours under normal condition	25	35	42	39	JIS K6854
Adhesion after heat aging (70 °C × 96 hours)	18	42	45	45	JIS K6854
Adhesion under high temperature (80 °C)	20	30	35	32	JIS K6854

The test pieces used in the test are a polypropylene plate and a polypropylene film, and, 150 grams per square meter of the respective adhesive compositions of Table 1 is applied by using a brush on the respective bonding surfaces. After keeping 15 minutes in the room of temperature 23 °C and humidity 60%, the two test pieces are put together and pressed by a hand

roller for bonding between these.

The adhesive composition of the test example 1 of Table 2, in which the conventionally and generally used synthetic chloroprene rubber is used, shows the lowest adhesion comparing with the adhesive compositions of the other test examples in all test conditions of normal condition, heat aging and high temperature.

On the other hand, the test examples of 2 through 4 of Table 2, in which the carboxylated synthetic chloroprene rubber is used for the adhesive compositions, show higher values of adhesion strength in all test conditions of normal condition, heat aging and high temperature. The test example 3, in which only hydroxyethyl-acrylate-grafted chlorinated polypropylene is added to the additive, shows the highest adhesion strength in all of the test conditions.

Table 3 shows the basic composition of the synthetic chloroprene rubber adhesive composition of the present invention, which is obtained from the above test results.

Table 3

	(PHR)
Carboxylated synthetic chloroprene rubber	100
Antioxidant	2
Magnesium oxide	8
Zinc oxide	5
Reinforcing resin	10 - 100
Tackifier	0 - 10
Inorganic filler	0 - 10
Chlorinated polypropylene ,or, Acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene	1 - 30
Organic solvent	as required

The above composition is an example and not limited to that. For example, the volume of the antioxidant, magnesium oxide, zinc oxide and organic solvent can be adjusted according to the necessity.

INDUSTRIAL APPLICABILITY

As described above, the synthetic chloroprene rubber adhesive composition of the present invention uses carboxylated synthetic chloroprene rubber selected from the varieties of synthetic chloroprene rubber, also uses a kind of chlorinated polypropylene, i.e., chlorinated polypropylene and/or the derivative thereof for the additive(s) of the adhesive composition, which creates synergistic effect for increasing adhesion to the polypropylene and durability against heat. Further details of the effects are as follows:

(1) When the chlorinated polypropylene derivative is acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene, and, when the volume of the chlorinated polypropylene and/or the chlorinated polypropylene derivative contained in the adhesive composition is adjusted to be 1 - 30 parts in weight for 100 parts in weight of carboxylated synthetic chloroprene rubber, an adhesive composition having a high temperature adhesion strength without losing a good adhesion to the polypropylene, can be obtained.

(2) In a process for producing a speaker having a speaker frame formed with polypropylene, a process for producing a speaker which results in a good adhesion and superior durability against heat can be obtained. In which process, various speaker components are bonded to the speaker frame using the synthetic chloroprene rubber adhesive composition containing carboxylated synthetic chloroprene rubber for the main ingredient thereof and further containing chlorinated polypropylene and/or a chlorinated polypropylene derivative. The good adhesion and superior durability against heat is resulted by using carboxylated synthetic chloroprene rubber for the main ingredient and chlorinated polypropylene and/or a chlorinated polypropylene derivative for the additive(s) of the adhesive composition.

(3) When the chlorinated polypropylene derivative is acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene and when the volume of the chlorinated polypropylene and/or the chlorinated polypropylene

derivative contained in the adhesive composition is adjusted to be 1 - 30 parts in weight for 100 parts in weight of carboxylated synthetic chloroprene rubber, a process for producing a speaker, in which various speaker components are more strongly bonded under high temperature to the speaker frame formed with polypropylene, can be obtained.

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What is claimed is:

1. A synthetic chloroprene rubber adhesive composition which contains carboxylated synthetic chloroprene rubber for the main ingredient thereof, and further contains chlorinated polypropylene and/or chlorinated polypropylene derivatives.

2. A synthetic chloroprene rubber adhesive composition according to claim 1, wherein said chlorinated polypropylene derivative is acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene, and, the volume of said chlorinated polypropylene and/or said chlorinated polypropylene derivatives contained in said adhesive composition is 1 - 30 parts in weight for 100 parts in weight of said synthetic chloroprene rubber.

3. A process for producing a speaker having a speaker frame formed by molding polypropylene, wherein various speaker components are bonded to said speaker frame by using a synthetic chloroprene rubber adhesive composition which contains carboxylated synthetic chloroprene rubber for the main ingredient thereof, and further contains chlorinated polypropylene and/or a chlorinated polypropylene derivatives.

4. A process for producing a speaker according to claim 3, wherein said chlorinated polypropylene derivative is acrylic-monomer-and-methacrylic-monomer-grafted chlorinated polypropylene, and, the volume of said chlorinated polypropylene and/or said chlorinated polypropylene derivatives contained in said adhesive composition is 1 - 30 parts in weight for 100 parts in weight of said synthetic chloroplane rubber.

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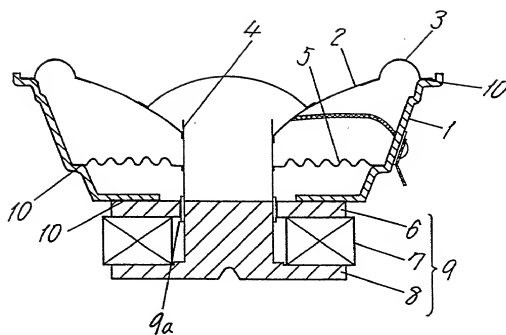
30

Reference numerals

- 1 Speaker frame
- 2 Cone (vibration plate)
- 3 Edge
- 5 4 Voice coil
- 5 Damper
- 6 Top plate
- 7 Magnet
- 8 Bottom plate
- 10 9 Magnetic circuit
- 9a Magnetic gap
- 10 Adhesive

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Fig. 1



DECLARATION AND POWER OF ATTORNEY FOR U.S. PATENT APPLICATION

(X) Original () Supplemental () Substitute (X) PCT () DESIGN

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Title: SYNTHETIC CHLOROPRENE RUBBER ADHESIVE COMPOSITION AND PROCESS FOR PRODUCING SPEAKER BY USING THE SAME

of which is described and claimed in:

- () the attached specification, or
 () the specification in application Serial No. _____, filed _____, and with amendments through _____ (if applicable), or
 (X) the specification in International Application No. PCT/JP99/00045, filed January 8, 1999, and as amended on 11/2 (if applicable).

I hereby state that I have reviewed and understand the content of the above-identified specification, including the claims, as amended by any amendment(s) referred to above.

I acknowledge my duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim priority benefits under Title 35, United States Code, §119 (and §172 if this application is for a Design) of any application(s) for patent or inventor's certificate listed below and have also identified below any application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NO.	DATE OF FILING	PRIORITY CLAIMED
Japan	10-013517	January 9, 1998	Yes

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	U.S. FILING DATE	STATUS: PATENTED, PENDING, ABANDONED

And I hereby appoint Michael R. Davis, Reg. No. 25,434; Matthew M. Jacob, Reg. No. 25,154; Jeffrey Noltan, Reg. No. 25,408; Warren M. Cheek, Jr., Reg. No. 33,367; Nils Pederson, Reg. No. 33,145; and Charles R. Wauts, Reg. No. 33,142, who together constitute the firm of WENDEROTH, LIND & PONACK, L.L.P., jointly and severally, attorneys to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith.

I hereby authorize the U.S. attorneys named herein to accept and follow instructions from Matsushita Electric Industrial Co., Ltd. as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and myself. In the event of a change in the persons from whom instructions may be taken, the U.S. attorneys named herein will be so notified by me.

Attachment B

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Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY ZIP CODE
Full Name of Fifth Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY ZIP CODE
Full Name of Sixth Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME
Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY ZIP CODE

I further declare that all statements made herein of my own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

1st Inventor Kazuroku OKUZAWA Date November 15, 1999
2nd Inventor Yoshio BABA Date November 15, 1999
3rd Inventor Kazutami WAKABAYASHI Date November 15, 1999
4th Inventor _____ Date _____
5th Inventor _____ Date _____
6th Inventor _____ Date _____

The above application may be more particularly identified as follows:

U.S. Application Serial No. 09/380,812 Filing Date September 9, 1999

Applicant Reference Number P17508-01 (IS. Hasegawa) Atty Docket No. 00169/P17508-01

Title of Invention SYNTHETIC CHLOROPRENE RUBBER ADHESIVE COMPOSITION AND PROCESS FOR PRODUCING SPEAKER BY USING THE SAME